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10/670,627

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EXAMINER

HARRISON, CHANTE E

ART UNIT

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2628

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/670,627

Applicant(s)

MACINNIS ET AL.

Examiner

CHANTE HARRISON

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 1-6, 14, 16-20, 28, 29, 35-37 and 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 52-54 is/are allowed.
- 6) ☒ Claim(s) 7-13, 15, 21-27, 30-34, 38-48, 50, 51 and 57 is/are rejected.
- 7) ☒ Claim(s) 55 and 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communications: Amendment and RCE, filed on 12/5/07.

2. Claims 1-57 are pending in the case. Claims 7, 21, 30, 40 and 51-57 are independent claims. Claims 7 and 40 have been amended. Claims 51-57 have been newly added. Claims 1-6, 14, 16-20, 28, 29, 35-37 and 49 have been canceled.

1. Claims 55 and 56 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 52 and 53, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 51 and 57 are rejected under 35 U.S.C. 102(e) as being anticipated by Ting-Chung Chen, US 6,108,047, 2000.

Regarding independent claim 51 an input for receiving a video image (col. 2, ll. 55-60); a scaler engine (Fig. 5D "70"; Fig. 10A & 16) capable of both downscaling the video image to generate a first scaled video image (col. 4, ll. 35-40) and upscaling the video image to generate a second scaled video image (col. 4, ll. 20-34), the scaler engine using a clock selected between a video input clock and a display output clock (Fig. 16 "148, 150"); a memory capable of storing the video image or the first scaled video image (Fig. 16 "128"); and means for determining whether the video image is to be downscaled or upscaled, wherein the scaler engine comprises a horizontal scaler and a vertical scaler (col. 3, ll. 25-30), and wherein one or both of the horizontal scaler and the vertical scaler comprises a programmable filter (col. 2-3, ll. 65-9; col. 3, ll. 43-47, 55-65).

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Regarding independent claim 57, the claim is similar in scope to claim 51. thus the rationale as applied in the rejection of claim 51 applies herein.

Claim Rejections 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7-13, 15, 40-48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isani, U.S. Patent Number 5,452,235 in view of Potu et al., U.S. Patent Number 5,812,144.

Regarding claim 7, Isani discloses a video scaler (202) comprising: an input (104) for receiving a video image (104, video capture source, which Examiner interprets as input for video image); clock-selection circuitry (i.e. the video adapter includes enable logic for controlling the active display component relative to the clock signal) (abstract) that receives a video input clock and a display output clock and selects one of the video input clock and the display output clock for upscaling (col. 6, lines 18-27) and one of the video input clock and the display output clock for downscaling of the video image (col. 6,

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II. 28-60); a scaler engine (202, video scaler) a memory (102) capable of storing the video image or the first scaled video image (col. 3, lines 3-33)

However it is noted that Isani fails to disclose capable of both downscaling the video image to generate a first scaled video image and upscaling the video image to generate a second scaled video image, the scaler engine using a clock selected between a video input Clock and a display output clock; and means for determining whether the video image is to be downscaled or upscaled.

Potu discloses capable of both downscaling the video image to generate a first scaled video image and upscaling the video image to generate a second scaled video image (col. 5, lines 43-56), using a clock selected between a video input clock and a display output clock (col. 5, lines 50-52); and means for determining whether the video image is to be downscaled or upscaled (col. 5, lines 5-7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the video scaler of Isani, having a memory storing a video image and a scaled video image, the upscaled and downscaled image and the clock between the video input and display output, as disclosed by Potu, to provide on-the fly resizing with pixel clock manipulation to display video image in real time.

Regarding claim 8, Isani discloses further comprising: first means capable of receiving the video image to be scaled from the input (col. 3, lines 1-5), receiving the first scaled video image from the scaler engine, and providing the video image to be scaled or the

first scaled video image to the memory (col. 3, lines 3-10); second means capable of receiving the video image to be scaled from the input, receiving the video image to be scaled from the memory, and providing the video image to be scaled or the video image to be scaled to the scaler engine (col. 3, lines 28-68); and third means capable of receiving the first scaled video image from the memory, receiving the second scaled video image from the scaler engine, and outputting either the first scaled video image or the second scaled video image (col. 4, lines 1-23)

However it is noted that Isani fails to disclose capable of both downscaling the video image and upscaling the video image.

Potu discloses capable of both downscaling the video image and upscaling the video image (col. 5, lines 43-56), and means for determining whether the video' image is to be downscaled or upscaled (col. 5, lines 5-7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the video scaler of Isani, having a memory storing a video image and a scaled video image, the upscaled and downscaled image as disclosed in Potu, to provide on-the fly resizing with pixel clock manipulation to display video image in real time.

Regarding claim 9, Potu discloses further comprising fourth means capable of receiving and selecting between digital video image and a digitized analog video image, and

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outputs the selected one of the digital video image and the digitized analog video image as the video image (col. 4, lines 63-67)

Regarding claim 10, Potu discloses wherein the scaler engine downscales the video image using the video input clock (col. 6, lines 18-27)

Regarding claim 11, Potu discloses wherein the scaler engine upscales the video image using the display output clock (col. 6, lines 28-60)

Regarding claim 12, Potu discloses further comprising a plurality of line buffers for providing the video image to the input (col. 5, lines 11-19, and col. 6, lines 35-36, pixel sequence in memory for a line)

Regarding claim 13, Potu discloses wherein the scaler engine comprises a horizontal scaler and a vertical scaler (col. 6, lines 10-14)

Regarding claim 15, Isani discloses wherein the scaler engine is a single physical device that is logically in both an upscale path and a downscale path of the video image (figures 1 and 2)

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Regarding claim 40, Potu discloses circuitry for determining whether the video image is to be downsampled or upsampled (col. 4-5; ll. 60-10; Fig. 2). The rationale as applied in the rejection of claim 7 applies herein.

Regarding claims 41-43, the rationale as applied in the rejection of claim 8 applies herein.

Regarding claim 44, the rationale as applied in the rejection of claim 9 applies herein.

Regarding claims 45-48 and 50, the rationale as applied in the rejection of claims 10-13 and 15 apply herein.

4. Claims 21-27, 30-34, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potu et al., U.S. Patent Number 5,812,144.

Regarding claim 21, Potu discloses receiving a video image by a video scaling engine (col. 4, ll. 44-50); reducing memory space by scaling the video image before writing the video image to memory or after reading the video image from the memory (i.e. logic for determining whether to write the data to memory and downscale or read the data from

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memory and upscale, which provides for a reduction in bandwidth of the input data, which in turn requires less memory space as the reduction of data uses less memory space for storage) (col. 5, ll. 4-7, 10-15, 43-45); and scaling the received video image based on the determination (col. 5, ll. 28-31; col. 6, ll. 22-24).

Potu fails to specifically disclose determining whether the video scaling engine *requires* less memory space.

It would have been obvious to one of ordinary skill in the art to include determining whether the video scaling engine requires less memory space with the method of Potu because Potu discloses logic for determining whether to write the data to memory and downscale or read the data from memory and upscale, which provides for a reduction in bandwidth of the input data, which in turn requires less memory space as the reduction of data uses less memory space for storage.

One of ordinary skill in the art would have been motivated to include determining whether the video scaling engine requires less memory space with the method of Potu for the advantage of controlling memory to perform realtime video resizing.

Regarding claim 22, Potu discloses if the video scaling engine requires less memory space to scale the video image before writing the video image to the memory (col. 5, ll. 10-15; col. 7, ll. 25-30):

a) scaling the video image in the video scaling engine using a video input clock of the video scaling engine to generate a first scaled video image (co. 7, ll. 25-30); b) writing the first scaled video image to the memory (i.e. storing the

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downscaled image in the field memory) (col. 7, ll. 29-31); c) reading the first scaled video image from the memory (col. 5, ll. 19-23); and d) outputting the first scaled video image (col. 5, ll. 23-25).

Regarding claim 23, Potu discloses if the video scaling engine requires less memory space to scale the video image after reading the video image from the memory (col. 5, ll. 4-8, 42-46):

e) writing the video image to the memory prior to scaling (col. 5, ll. 42-45);

f) reading the video image from the memory (col. 5, ll. 36-39);

g) scaling the video image in the video scaling engine using a display output clock of the video scaling engine to generate a second scaled video image (col. 5, ll. 28-36); and h) outputting the second scaled video image (col. 5, ll. 39-41).

Regarding claim 24, Potu discloses scaling the video image up or down (col. 5, ll. 28-30; col. 6, ll. 22-24) and horizontally or vertically (col. 6, ll. 11-14, 28-34)

Regarding claim 25, Potu discloses the image is a downscaled video image (col. 7, ll. 25-30)

Regarding claim 26, Potu disclose the second scaled image is an upscaled video image (col. 5, ll. 28-30).

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Regarding claim 27, Potu discloses determining whether the image is to be downscaled or upscaled (i.e. synchronization signals determine whether the data is to be stored as upscaled or downscaled) (col. 5, ll. 4-9, 10-15, 35-40; col. 6, ll. 20-24)

Regarding claim 30, the rationale as applied in the rejection of claim 21 applies herein.

Regarding claim 31, the rationale as applied in the rejection of claim 22, applies herein.

Regarding claim 32, the rationale as applied in the rejection of claim 23 applies herein.

Regarding claim 33, the rationale as applied in the rejection of claim 27 applies herein.

Regarding claim 34, Potu discloses scaling the image prior to storing it in the memory comprises downscaling the video image (col. 7, ll. 25-30)

Regarding claim 38, the rationale as applied in the rejection of claim 25 applies herein

Regarding claim 39, the rationale as applied in the rejection of claim 26, applies herein.

Allowable Subject Matter

1. Claims 52-54 are allowed.

Response to Arguments

1. Applicant's arguments filed 12/5/07 have been fully considered but they are not persuasive.

Applicant argues (p. 22) Isani and Potu fail to disclose newly added limitations "clock selection circuitry...".

In response to applicant's argument the newly added limitations are addressed in the above rejection.

Applicant argues neither Isani nor Potu discloses receiving and selecting between a video input clock and a display output clock.

In response, Potu discloses the video adapter includes enable logic for controlling the active display component relative to the clock signal (abstract). Potu additionally, discloses scaling data using the pixel clock (i.e. video input clock) and a frequency adjusted pixel clock (i.e. display output clock) (col. 6, ll. 18-60). Thus, Potu

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discloses receiving and selecting between a video input clock and a display output clock.

Applicant argues, Potu does not disclose, "means for determining whether the video image is to be downscaled or upscaled".

In response, Potu discloses receiving video information (col. 4, ll. 45-50) and storing the video information in field memory "46" having both upscale logic "46B" and downscale logic "46A". Potu teaches providing synchronization signals to one of the two field memory logic (col. 5, ll. 4-7, 10-15), where the field memory both provides the data to be scaled (col. 5, ll. 35-40) and stores the data that is scaled (col. 6, ll. 22-24). Thus, Potu discloses means for determining whether the video image is to be downscaled or upscaled as he teaches providing synchronization signals to one of two field memory logic where the selected field memory logic indicates a determination as to whether the data is to be upscaled or downscaled.

Based on the above response, Examiner believes the claims are not patentable.

Therefore, the rejection under Isani in view of Potu is maintained. For the above reasons, claims 8-13, 15, 41-48 and 50 are not patentable.

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Applicant argues Potu fails to disclose a scaling engine.

In response, Potu discloses a video adapter that performs video scaling functions. Thus, Potu's video adapter is interpreted as a video scaling engine as it is similar in function.

Applicant argues (p. 29) the citation referenced in the rejection does not disclose how scaling is performed.

In response Applicant does not claim how scaling is performed, but how to reduce memory by scaling. Thus, the citations support the reduction of memory by scaling.

For the above reasons claim 30 and dependent claims 22-27, 31-34, 38 and 39 are not allowable.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chante Harrison whose telephone number is 571-272-7659. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chante Harrison
Examiner
Art Unit 2628

Ch
February 29, 2008

